CAP1616 Gateway documentation
Stage 1: Define Gateway

Design Principles
Realignment of Q36 and Q37 to accommodate Dublin Runway 2

NATS Uncontrolled

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Publication history

Issue	Month/Year	Change Requests in this issue
Issue 0.1	Oct 2019	First issue submitted to the CAA

Contents

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1. Introduction

1.1 This document forms part of the document set required in accordance with the requirements of the CAP1616 airspace change process.

1.2 This document aims to provide adequate evidence to satisfy Stage 1 Define Gateway, Step 1B Design Principles.

1.3 In order to meet the interface requirements for new SIDs proposed by the IAA from the new Dublin Runway 2 (EIDW 28R/10L) routes Q36 & Q37 will need to be realigned to new points on the FIR boundary (instead of LIFFY).

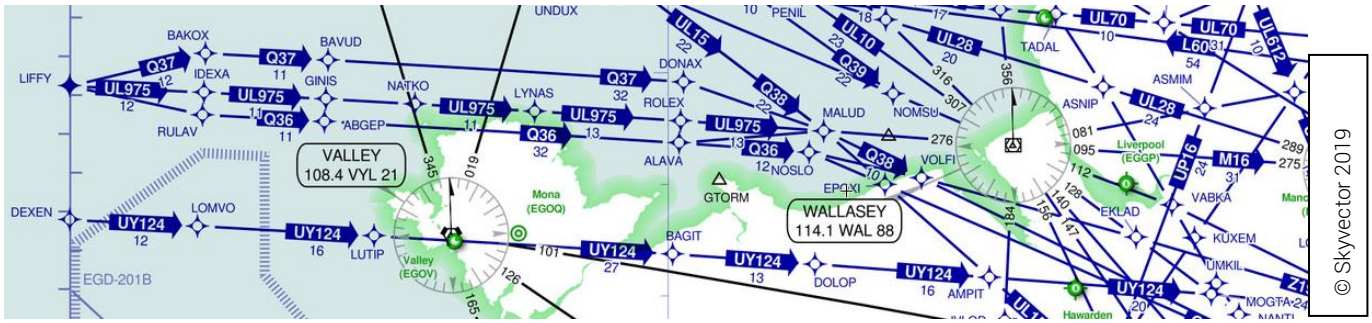

Figure 1: Current Q36 and Q37 location

2. SARG/DfT Design Requirements

2.1 An outline of the generic design aims relating to the SARG/DfT requirements that NATS considers for all ACPs is given below, including those relating specifically to environmental aspects.
Those which can be applied to the realignment of Q36 and Q37 ATS routes are highlighted in **bold**.

2.2 SARG/DfT design aims:

a) **To design routes based on RNAV1**
b) **To ensure that designs are consistent with Government policy (e.g. Air Transport White Paper/ Review)**
c) **Runway development: where applicable accommodate future growth due to proposed runway expansion projects**

2.3 Environmental design aims:

Where practical, within operational and safety constraints:

a) enable CDAs
b) **minimise track mileage**
c) **allow more efficient flight profiles (i.e. clear climbs/descents on separated tracks)**
d) minimise population over-flown
e) minimise exposure of new populations to noise and visual impacts
f) minimise low level over-flight of AONBs, National Parks and other tranquil areas

2.4 These aims are aspirational – it may not be possible to achieve all aims within one design. The final design will reflect a balance between competing requirements. NATS will seek to demonstrate this balanced approach to achieving the design aims within the consultation material and ACP.

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3. Airspace Design Principles (DP)

3.1 Safety

Safety is always the number one priority (A)	Maintain or enhance current levels of safety. Many of the factors below are motivated by ensuring the utmost safety. A change to airspace will only be approved by the CAA if it is as least as safe as current operations. Where possible we will always strive to improve safety.

3.2 Operational

Resilience (B)	The proposed airspace design will maintain or enhance operational resilience of the ATC network.
Capacity (B)	The proposed airspace design will enhance benefits from additional systemisation.
Support of Dublin Runway 2 (B)	The proposed amendments to the route structure will provide a compatible interface with the Dublin second parallel runway project (Dublin SIDs and COP alignment).
Training (B)	The design minimises operational impact to airspace users i.e. minimal impact for ATC/Airlines.

3.3 Environmental

CO_2 emissions (B)	The proposed route amendments will facilitate the reduction of CO_2 emissions per flight (removal of confluence of airways). As all changes are above 7,000ft, the reduction of CO_2 emissions will be prioritised.
Impact to stakeholders on the ground (C)	Minimise environmental impacts to stakeholders on the ground (all changes are above 7,000ft and over the sea so noise impact is not a primary consideration for this ACP).

3.4 Technical

MoD requirements (B)	The proposed route amendments will have minimal MoD operational impact.
Minimise CAS (B)	The proposed changes are contained within the extant airspace (no additional airspace required).
Use of PBN (B)	The airspace will enhance the use of PBN (new Dublin RNAV SIDs linking to the existing UK RNAV1 route structure). The use of modern navigation standards will reduce controller and pilot workload via the reduction of tactical intervention.

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4. Stakeholder Engagement in Developing Design Principles

A group of targeted stakeholders were sent a set of draft Design Principles on 6th August 2019; these are listed below. They were asked to provide comments by 30th August and send them to the NATS Airspace Consultation mailbox. The deadline for comments was extended by a week to the 6th September and a prompt email was sent to all stakeholders on the 3rd September for final comments.

Stakeholders contacted:

Airlines
Airlines UK, British Airline Pilots Association (BALPA), British Airways (BA), easyJet, Low Fare Airlines, Virgin

Aviation Stakeholders
Airspace 4 All, BAE Systems, British Helicopter Association (BHA), Defence Airspace and Air Traffic Management (DAATM), Guild of Air Traffic Control Officers (GATCO), Gulf Aviation Academy (GAA), Light Aircraft Association (LAA)

Environmental Stakeholders
Aviation Environment Federation (AEF)

General Aviation Stakeholders
Aircraft Owners and Pilot Association (AOPA), Association of Remotely Piloted Aircraft Systems (ARPAS), British Business and General Aviation Association (BBGA), British Gliding Association (BGA)

There were three responses received from this engagement which can be found in Appendix A below.

- BAE Systems confirmed that they had no comments on the draft Design Principles.
- British Helicopter Association confirmed that they had no comments on the draft Design Principles.
- A response was received from the MoD with a number of comments which NATS responded to:
    - Clarity was sought on the Design Principle priorities. NATS confirmed the order of priority (A – C).
    - The MoD suggested that DP3 (compatible interface with Dublin) should be a lower priority than DP6 (minimal MoD operational impact). NATS explained that the priority reflects the fact that the accommodation of dual runway operations at Dublin is the driver behind this ACP. However, minimal operational impact for the MoD is equally important hence the same priority.
    - The MoD suggested that NATS seek assurance that there is no dependency between this ACP and the Y124 ACP and whether this would require a change to existing adjacent airspace. NATS noted this and confirmed that the two submissions are independent but will take the other design into account.
    - The MoD replied that they were content with the responses provided by NATS.

Table 1 below gives a summary of the ongoing engagement that has taken place and is planned, between NATS and aviation stakeholder groups.

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Date	Meeting	Attended by
20/06/2018	NATS – IAA Dublin Runway 2	IAA, NATS
27/06/2019	Meeting at NATS Prestwick	IAA, NATS
07/08/2019	Email Engagement Response	Email from British Helicopter Association
28/08/2019	Email Engagement Response	Email from MoD
09/09/2019	Email Engagement Response	Email from BAE Systems

Table 1: Summary of Stakeholder Engagement Activity

During this series of engagement, Design Principles have been discussed and this dialogue has influenced the Design Principles stated in section 3. Design Principles were first presented to the IAA on the 27th June 2019, for which there was no objections. There was general agreement to the Design Principles from stakeholders during the engagement activities, hence no "differing views" which needed to be reconciled (ref. CAP1616 para 114).

5. Appendix A: Stakeholder Engagement Feedback

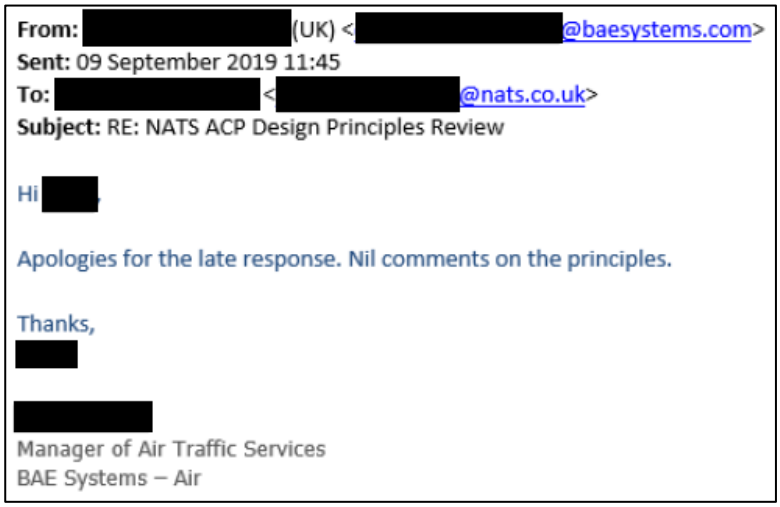

Figure 2: BAE Systems Response

From: [redacted]@britishhelicopterassociation.org>
Sent: 07 August 2019 12:17
To: [redacted]<[redacted]@nats.co.uk>
Subject: RE: NATS ACP Design Principles Review

[redacted]

Thank you for the sight of this work – The BHA has no comments

Thanks

[redacted]

[redacted]
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VERTICAL FLIGHT EXPO & CONFERENCE
5-7 NOV - FARNBOROUGH

formerly known as helitech international

Figure 3: British Helicopter Association Response

Ministry of Defence

Defence Airspace & Air Traffic Management
CAA Aviation House, 1E
Gatwick Airport South
West Sussex
RH6 0YR

Telephone: [redacted]

Email: [redacted]@mod.gov.uk

[redacted]
Manager Systemised Airspace Development
4000 Parkway, Whiteley
Fareham
Hants
PO15 7FL

28 Aug 19

Dear [redacted]

MINISTRY OF DEFENCE (MOD) RESPONSE TO NATS ACPs: Y124 AND Q36/Q37

1. Thank you for your recent correspondence regarding the design principles for ACPs: Realignment of Q36 and Q37 to accommodate Dublin Runway 2 and the revised position of Y124. Specific comments related to each of the design principles for both ACPs can be found at Annex A and Annex B respectively.

2. Given the information provided, it is unclear the priority that each design principle will be given. It is assumed that group A is top priority, followed by those in Group B and the Group C. It would be beneficial to have clarification on how the DPs will be prioritised.

7. The MOD welcomes continued engagement on both ACPs. If you require any further information, please do not hesitate to contact the undersigned.

Yours faithfully,

[*signed electronically*]

[redacted]
Squadron Leader
SO2 Airspace Plans

Figure 4: MoD Response Header (references to the separate Y124 ACP have been removed)

Annex A to
MOD Response to NATS
ACPs Y124 and Q36/Q37
Dated 28 Aug 19

MOD RESPONSE TO DESIGN PRINCIPLES FOR Q36/Q37 ROUTE AND COP CHANGES AT THE FIR BOUNDARY ACP

DP0 Safety **(A)**
Maintain or enhance current levels of safety. Agree.

DP1 Operational (Resilience) **(B)**
The proposed airspace design will maintain or enhance operational resilience of the ATC network. MOD has no comment.

DP2 Operational (Capacity) **(B)**
The proposed airspace design will enhance benefits from additional systemisation. MOD has no comment.

DP3 Operational (Dublin Rwy 2) **(B)**
The proposed amendments to the route structure will provide a compatible interface with the Dublin 2nd parallel runway project (Dublin SIDs and COP alignment) MOD believe this should be a lower priority than DP6.

DP4 Environmental (CO2 Emissions) **(B)**
The proposed route amendments will facilitate the reduction of CO2 emissions per flight (removal of confluence of airways) MOD has no comment.

DP5 Environmental (Impact to Stakeholders on the Ground) **(C)**
Minimise environmental impacts to stakeholders on the ground (all changes are above 7000ft and over the sea) MOD has no comment.

DP6 Technical (MoD Requirements) **(B)**
The proposed route amendments will have minimal MoD operational impact Agree.

DP7 Technical (Minimise CAS) **(B)**
The proposed changes are contained within the extent airspace (no additional airspace required) MOD broadly agree, however seek assurance that there is no dependency re the Y124 ACP and that there no change or amendment required to existent adjacent airspace as part of this ACP.

DP8 Technical (Use of PBN) **(B)**
The airspace will enhance the use of PBN (Dublin RNAV SIDs linking to existing RNAV 1 route structure) MOD has no comment.

DP9 Operational (Training) **(B)**
The design minimises operational impact to airspace users (ATC/ Airlines – Minimal Training) MOD has no comment.

Figure 5: MoD Response